

AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning at page 18, line 11, with the following rewritten paragraph:

--The peptide (SEQ ID NO: 3)EMDEEEDIMNYA was run through a second replacement analysis. Again some replacements improve binding activity considerably. These replacements were used to design the improved peptide (SEQ ID NO: 4)EMDEEEDVDPDYA. Essential is that the first part of (SEQ ID NO: 3)EMDEEEDIMNYA, (~~portion~~ residues 1-6 of SEQ ID NO: 3)EMDEEE, does not contain critical residues whereas the latter part, (~~portion~~ residues 7-12 of SEQ ID NO: 3)DIMNYA, does. Combination of the improved residues in this latter part results in the sequence (~~portion~~ residues 1-6 of SEQ ID NO: 4)DVDPDYA. The sequence (~~portion~~ residues 7-12 of SEQ ID NO: 4)DVDPDYA is identical to the linear epitope of antibody 26/9. Thus, the lead peptide (SEQ ID NO: 2)CGCAAMNIRCYA derived from a few thousand random dodecapeptides was turned into native epitope sequence through two replacement analyses.--

Please replace the paragraph beginning at page 19, line 31, with the following rewritten paragraph:

--The sequence (~~portion~~ residues 7-12 of SEQ ID NO: 4)DVDPDYA is the original epitope. The peptide (SEQ ID NO: 4)EMDEEEDVDPDYA has a 10-fold improved binding affinity (in

B2
ant
solution) over the native epitope peptide (SEQ ID NO:
18) YPYDVDPDYASLRS.--

Please replace the paragraph beginning at page 29, line
24, with the following rewritten paragraph:

--REPLACEMENT ANALYSIS-IA

(SEQ ID NOS 86, 89-93, respectively, in order of appearance)

original lead : ANWPSA (SEQ ID NO: 86):

activity at ≥ 10.0 $\mu\text{g/ml}$

improved position-01: HNWPSA (SEQ ID NO: 89):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-02: AWWPSA (SEQ ID NO: 90):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-03: ANAPSA (SEQ ID NO: 91):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-04: ANWSSA (SEQ ID NO: 92):

activity at ≥ 5.0 $\mu\text{g/ml}$

combination improv. : HWASSA (SEQ ID NO: 93):

activity at ≥ 1.0 $\mu\text{g/ml}$ --

Please replace the paragraph beginning at page 29, line
32, with the following rewritten paragraph:

--REPLACEMENT ANALYSIS-IIA

(SEQ ID NOS 93, 94, 94, respectively, in order of appearance)

comb. rep-an. IA : HWASSA (SEQ ID NO: 94):

activity at ≥ 1.0 $\mu\text{g/ml}$

improved position-05: HWASPA (SEQ ID NO: 95):

activity at ≥ 0.5 $\mu\text{g/ml}$

combination improv. : HWASPA (SEQ ID NO: 94):

activity at ≥ 0.5 $\mu\text{g/ml}$ --

Please replace the paragraph beginning at page 30, line
4, with the following rewritten paragraph:

--REPLACEMENT ANALYSIS-IB

(SEQ ID NOS 87, 95-99, respectively, in order of appearance)

original lead : KLITRW (SEQ ID NO: 87):

activity at ≥ 10.0 $\mu\text{g/ml}$

improved position-01: SLITRW (SEQ ID NO: 95):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-02: KSITRW (SEQ ID NO: 96):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-03: KLATRW (SEQ ID NO: 97):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-06: KLITRY (SEQ ID NO: 98):

activity at ≥ 5.0 $\mu\text{g/ml}$

combination improv. : SSATRY (SEQ ID NO: 99):

activity at ≥ 1.0 $\mu\text{g/ml}$ --

Please replace the paragraph beginning at page 30, line
13, with the following rewritten paragraph:

--REPLACEMENT ANALYSIS-IIB

(SEQ ID NOS 99, 100, 100, respectively, in order of
appearance)

comb. rep-an. IB : SSATRY (SEQ ID NO: 99):

activity at ≥ 1.0 $\mu\text{g/ml}$

improved position-02: SPATRY (SEQ ID NO: 100):

activity at ≥ 0.5 $\mu\text{g/ml}$

combination improv. : SPATRY (SEQ ID NO: 100):

activity at ≥ 0.5 $\mu\text{g/ml}$ --

2 Please replace the paragraph beginning at page 30, line 20, with
the following rewritten paragraph:

--REPLACEMENT ANALYSIS-IC

(SEQ ID NOS 88, 101-104, respectively, in order of appearance)

original lead : NVCSWS (SEQ ID NO: 88):

activity at ≥ 10.0 $\mu\text{g/ml}$

improved position-02: NICSWS (SEQ ID NO: 101):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-04: NVCHWS (SEQ ID NO: 102):

activity at ≥ 5.0 $\mu\text{g/ml}$

improved position-06: NVCSWA (SEQ ID NO: 103):

activity at ≥ 5.0 $\mu\text{g/ml}$

combination improv. : NICHWA (SEQ ID NO: 104):

activity at ≥ 1.0 $\mu\text{g/ml}$ --

2 Please replace the paragraph beginning at page 30, line 29, with
the following rewritten paragraph:

--REPLACEMENT ANALYSIS-IIC

(SEQ ID NOS 104-107, respectively, in order of appearance)

comb. rep-an. IC : NICHWA (SEQ ID NO: 104):

activity at ≥ 1.0 $\mu\text{g/ml}$

improved position-01: YICHWA (SEQ ID NO: 105):

activity at ≥ 0.5 $\mu\text{g/ml}$

improved position-02: NVCHWA (SEQ ID NO: 106):

activity at ≥ 0.5 $\mu\text{g/ml}$

combination improv. : YVCHWA (SEQ ID NO: 107):

activity at ≥ 0.1 $\mu\text{g/ml}$ --

2 Please replace the paragraph beginning at page 31, line 1, with
the following rewritten paragraph:

--ALIGNMENT combination improv. IIA, IIB and IIC:

(SEQ ID NOS 94, 100, 107-108 respectively, in order of
appearance)

combination improvements 1: HWASPA (SEQ ID NO: 94)

combination improvements 2: SPATRY (SEQ ID NO: 100)

combination improvements 3: YVCHWA (SEQ ID NO: 107)

consensus: YVCHWASSATRY (SEQ ID NO: 108)

activity at 0.01 µg/ml--
